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Sheep Nodule Worms

Parasite is causing suture shortage

*K. W. Stouder, D.V.M.**

AMONG the many other war shortages, absorbable sutures are becoming very scarce and the supply of raw material for producing them is difficult to obtain. This is because the so-called "cat gut" suture material is obtained from the upper 8 or 9 feet of the small intestine of sheep.

It is true that we are slaughtering many thousand head of sheep to help supply the unprecedented demands for food, but a small parasite known as *Oesophagostomum columbianum*, commonly called the "nodule worm," has become so well established in much of the area where sheep are produced that many sets of sheep intestines are of no value for suture material and will not even serve as sausage casings.

Military Importance

This is of considerable economic importance and deprives our military and civilian surgeons of much needed critical material at a time when the demand for it is increasing. Indeed, the matter has been considered of such vital importance to our armed forces that under date of July 17, 1942, Col. Clifford V. Morgan of the Medical Corps of the U. S. Army and Navy Munitions Board wrote in part as follows: "The early promotion of an educational campaign for combatting nodular worm infestation of sheep is very much to be desired. This office would like to see every possible measure taken to minimize the losses from this disease and will appreciate reports of progress being made along these lines from time to time."

Before the war we imported large quantities of sheep intestines from Australia for making surgical sutures, sausage casings and similar materials. Now these supplies are much reduced so we must look to our domestic sources for these materials.

Northwest Quarter Free

Fortunately the northwest quarter of the United States from Nebraska and the Dakotas west to the coast, all of which is a great sheep raising country, is nearly free of this parasite. So also is California, Arizona and New Mexico, but it is extremely prevalent in other parts of the country.

This information has been gained by tracing shipments of sheep in which the "knotty" casings were found back to the point of origin, and also from field surveys made by the B. A. I. of the U. S. Department of Agriculture, state veterinarians, extension specialists in veterinary medicine and sheep husbandry, and others.

Killing sheets from interior Iowa packing plants show that sheep originating in the southern half of the state are almost 100 percent infected, and to such an extent that the intestines are unfit for any use. The sheep from the northern half of the state are only a little better in this respect.

During the summer, Wilson and Company at Cedar Rapids ran three killing tests per week of native sheep slaughtered. Out of a total of 1,449 sheep reported, 94

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percent yielded "knotty" casings and only 91 head or 6 percent were clear. Another interesting fact brought out by this test was that the percentage of infected casings advanced from July to November. In July, 15 percent were clear; by October, only 4.7 percent were clear and 95.3 percent were nodule infested. This shows that as lambs live on infested pasture longer, as during the summer, the infection increases rapidly. During October only one lot out of 15 that were tested was clear. This was a small shipment of 26 lambs of which 20 were clear. They evidently came from a farm where this parasite was just becoming established.

Larvae of the nodule worm do not survive on pastures during moderately severe winters. Between seasons the worms are carried by sheep breeding stock. Control is therefore a matter of preventing lambs from becoming infected.

With all these facts in mind, a committee of meat processors, sheep producers, veterinarians and animal husbandmen met at Ames in July, 1942, to map out a plan of procedure designed to reduce the prevalence of the parasite in Iowa as much as possible. The plan of this committee includes urging sheep feeders who import thousands of feeder lambs from the ranges of the northwest every year not to turn them into pastures where native sheep have been grazing the same season because this land may be infected with nodule worm larvae.

Further plans of the committee include the preparation of a pamphlet describing the parasite, the damage it does and the methods of flock management and treatment which will reduce its prevalence in our sheep. These pamphlets will be supplied to sheep men generally.

Fortunately, a few years ago parasitologists of the U. S. Department of Agriculture, searching for more and better vermifuges for animals, discovered that phenothiazine had a high vermicidal value against the mature nodule worm as it lives in the lumen of the bowel. Systematic treatment with this anthelmintic will do much to lower the incidence of the parasite.

In addition, interior packers will supply the Extension Service with killing sheets, showing the amount of infestation in carcasses of native sheep slaughtered by them. Where these show heavy infestation, direct appeal will be made to the seller of those sheep to treat his remaining flock with phenothiazine and to work out a systematic plan of flock management to eradicate the parasite from his flock and his pastures.

Recommendations

The recommendations will be to have the flock drenched twice with the proper dosage of a suspension of phenothiazine once in late fall or early winter as the flocks leave the pastures, and again in early spring before they go out to the permanent pastures. This will prevent them from being possible carriers of any worms to produce eggs which will reinfest the pastures that winter freezes have freed of worm contamination.

In some of our heaviest sheep producing counties, special campaigns will be conducted with sheep men by sheep specialists and veterinarians. The whole problem will be discussed and demonstrations made showing when and how to drench sheep safely. Radio programs will be prepared also to help inform sheep men of the need to control nodule worms and how to do it. Phenothiazine will be kept conveniently handy and at low prices to encourage in every way the effective use of all the information we have to improve the situation.

This plan will not only help materially to provide the suture material which we will need in increasing amounts, but it will also save a tremendous amount of feed which has been largely wasted when fed to sheep heavily infected with parasites. Phenothiazine will destroy many other parasites in addition to the nodule worm, and it is well known that we suffer tremendous losses in the sheep industry from parasites.

This campaign will also help produce a better fleece, and a better quality of lamb and mutton in shorter time with less labor and less feed. All this will contribute to the war effort and have lasting benefits to the sheep industry.